

574.0673

PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

GEOGRAPHIC VARIATION IN THE CEDAR
WAXWING (*BOMBYCILLA CEDRORUM*)

BY THOMAS D. BURLEIGH

A routine comparison of cedar waxwings taken in Idaho during the breeding season with specimens taken during this season in the eastern United States revealed that the breeding population of Idaho is morphologically different. Cedar waxwings occur in small numbers during the winter months over much of Idaho, but in common with other resident species there is an interval in the late fall when no waxwings have been observed. Specimens taken during the winter were found to differ noticeably from the breeding birds as well as from examples from the east. This difference appeared to be too pronounced to be the result of seasonal wear. On the assumption that the winter examples represented a more northern breeding population, summer specimens from the extreme northern limits of the cedar waxwing's range were compared with winter specimens from Idaho. They appeared the same. It was at once apparent that the breeding waxwings of Idaho are replaced in the late fall by birds from farther north that represent another morphologically distinct population. *Bombycilla cedrorum* is, therefore, a composite of at least three geographic races. Two of these are of southerly distribution—one in the east and one in the west. The third extends across the continent north of the breeding range of the first two forms.

Before describing and applying names to these three subspecies it is necessary to determine to which geographical group the name *Bombycilla cedrorum* was originally applied.

The type locality of *Bombycilla cedrorum*, as given in the 5th edition of the A. O. U. Check-List (1957) is "Amérique depuis le Canada jusqu'au Mexique = eastern North America." This is based on *Bombycilla cedrorum* Vieillot, Hist. Nat. Ois. Amer. Sept., vol. 1, 1807 (1808), p. 88, pl. 57. Vieillot's obser-

uations, where the cedar waxwing is concerned, were made largely in Pennsylvania and New York, and it is logical to assume that the specimen he used in describing and naming this species was collected in one of these two states. The type locality is herewith restricted to Pennsylvania and, although it cannot be determined whether the original description was based on a breeding bird of that area or a migrant, it is presumed most likely that the more southern breeding population in the east was the basis for Vieillot's description and plate, and thus becomes the nominate race. Thus the western and northern populations appear to be the ones without names and are, therefore, described as follows.

***Bombycilla cedrorum larifuga*, new subspecies**

Characters: Adults of both sexes similar to *Bombycilla cedrorum cedrorum* but paler both above and below. Crown straw-colored and distinctly paler than the neck. Line at base of bill, lores and postocular patch dull black rather than velvety black, and much reduced; dull black of chin also much reduced, or wanting. Brown of throat and chest distinctly vinaceous, this character being obscure or wanting in *cedrorum*. There is no appreciable size difference.

Immatures of *larifuga* are equally distinct from *cedrorum*, being also paler, both above and below. Back grayish-olive rather than dark brown, crown vinaceous brown. The broad streaks on the under surface grayish brown, in contrast to the dark brown streaking of *cedrorum*.

Measurements: Adult male (8 breeding specimens from Idaho, eastern Washington and Oregon): Wing, 91–96 (93.3) mm; tail, 53–60 (57); exposed culmen, 8–11 (10.2). Adult female (3 breeding specimens from Idaho and British Columbia): Wing, 92–95 (93.5) mm; tail, 57–58 (57.5); exposed culmen, 8–10 (9.0).

Type: Adult male, No. 419709, U. S. National Museum (Biological Surveys collection), Headquarters, Clearwater County, Idaho, 21 August 1951; Thomas D. Burleigh, original number 14052.

Distribution: Breeds in southern British Columbia east of the coast ranges, southern Alberta, southern Saskatchewan, and southern Manitoba, south through eastern Washington east of the Cascades to southern Oregon, southern Idaho, and northern Montana. Winters irregularly within its breeding range and south to Panama and Colombia.

Remarks: Specimens of *Bombycilla cedrorum* from Washington and Oregon, west of the Cascades, proved rather puzzling. The upper parts, while distinctly gray, have a dark brown wash lacking in *larifuga*, and the crown is dark brown rather than straw-colored. The lines at the base of the bill, lores, and postocular patch are velvety-black, and noticeably less reduced. This darker coloration agrees with one of the characters of numerous races described from this area of morphological differentiation

notable examples being the hairy and downy woodpeckers, the brown creeper, and the song sparrow. Specimens available for critical study were too limited in number to justify any definite conclusions, and further collecting is necessary to determine whether the cedar waxwings of the coast region of Washington and Oregon represent a distinct race. For the time being they may be considered as a darker variant of *larifuga*.

Specimens of Bombycilla cedrorum larifuga examined: Total number, 38, from the following localities: *Idaho:* Harvard, 15 June 1952, 2 ♂ adult; Moscow, 29 September 1948, ♂ im., 2 July 1949, ♀ adult, 27 June 1955, ♂ adult; Boville, 19 July 1948, ♀ adult; Potlach, 16 October 1949, ♀ im., 4 August 1951, ♀ im., 13 July 1952, ♂ adult, 8 October 1952, ♀ im.; Headquarters, 21 August 1951, ♂ adult; Weippe, 21 October 1952, ♂ im.; New Meadows, 18 July 1960, ♂ adult. *Washington:* Grand Ronde River, 15 June 1919, ♂ adult; Pullman, 8 September 1948, ♀ im., 31 July 1950, ♂ adult. *Oregon:* Pendleton, 16 July 1955, ♂ adult. *Montana:* Darnalls, 26 June 1910, ♂ adult, 9 July 1910, ♂ adult; Kalispell, 11 August 1955, ♀ adult; Leedy, 14 July 1919, ♂ adult; Zortman, 25 July 1910, ♀ adult; Crazy Mts., 16 June 1917, ♀ adult. *British Columbia:* Vanderhoof, 12 August 1919, ♀ adult; Okanagan, 27 July 1920, ♂ adult; mouth of Couldery Creek, 14 July 1952, ♂ adult; Flathead Valley, 13 July 1956, ♂ adult. *Saskatchewan:* Kutawagan Lake, 16 June 1920, ♂ adult; Carnduff, 17 July 1956, ♂ adult. *Manitoba:* Shoal Lake, 30 July 1918, ♂ adult; Oak Lake, 6 August 1921, ♂ adult; Thicket Portage, 7 August 1936, 2 ♂ adult; Swan River, 24 June 1937, ♂ adult, 15 July 1937, ♀ adult; Clear Lake, 13 July 1938, ♂ adult; Bouscjour, 22 June 1951, ♀ adult; Overflowing River, 1 August 1951, 2 ♂ adult.

***Bombycilla cedrorum aquilonia*, new subspecies**

Characters: This is the grayest of the three races, the upper parts being uniformly dark gray. Color of crown variable, but in most instances distinctly vinaceous. Similar to *larifuga* in having the line at the base of the bill, lores, and postocular patch dull black, and much reduced and in having the black of chin much reduced, or entirely wanting. Throat and chest vinaceous, in contrast to the dark brown of *cedrorum*. There is no appreciable size difference.

Measurements: Adult male (8 breeding specimens from Newfoundland, Ontario, Canadian Labrador, Alberta and Alaska): Wing, 93–97 (94.0) mm; tail, 52–59 (54.5); exposed culmen, 8–9.5 (9.1). Adult female (11 breeding specimens from Newfoundland, Quebec, Ontario, Manitoba, and Alberta): Wing, 91–97 (92.6) mm; tail, 51–57 (53.7); exposed culmen, 9–11 (9.3).

Type: Adult male, No. 381593, U. S. National Museum (Biological Surveys collection), Searston, Newfoundland, 13 July 1943, H. S. Peters and T. D. Burleigh, original number 512.

Distribution: Breeds from Newfoundland west through the northern part of the Canadian Provinces to Alaska. Winters irregularly from the

northern part of the United States, south to the gulf coast and eastern Mexico, and rarely to Costa Rica.

Remarks: Through the kindness of W. Earl Godfrey, of The National Museum of Canada, an excellent series of breeding cedar waxwings from the Canadian Provinces was available for critical examination. A study of this material showed that *aquilonia* is a distinct race with a relatively narrow but continuous breeding range through the northern portion of the Canadian Provinces, extending from Newfoundland westward through Quebec, Ontario, Manitoba, Saskatchewan, and Alberta. Specimens from southern Alberta, Saskatchewan and Manitoba proved to a large extent referable to *larifuga*, but there were a sufficient number intermediate in their characters (5 from Manitoba, 3 from Saskatchewan, and 13 from Alberta) to show clearly that this is the area of intergradation between *larifuga* and *aquilonia*. These intermediate specimens are characterized by having the gray back tinged with brown as in *larifuga* but with the crown distinctly vinaceous rather than straw-colored.

Specimens of Bombycilla cedrorum aquilonia examined: Total number, 41, from the following localities: *Alaska:* Juneau, 22 August 1949, ♂. *Idaho:* Moscow, 22 November 1948, ♂, 8 November 1949, ♂, 3 December 1949, 2 ♀, 15 December 1949, 2 ♀, 24 December 1949, ♂, 4 January 1950, ♀, 27 January 1951, ♀, 15 November 1952, ♀, 23 April 1953, ♂, 16 December 1953, ♂, 25 December 1953, ♀, 30 January 1954, ♀, 28 December 1954, ♂, 3 November 1956, ♂; *Genesee:* 16 February 1950, ♂; *Lewiston:* 5 February 1950, 2 ♀. *Alberta:* Jasper Park, 27 July 1918, ♂, 15 August 1918, ♀, 16 August 1918, ♀; Cypress Hills, 7 July 1945, ♂, ♀, 10 July 1945, ♂; Banff, 15 June 1891, 2 ♀. *Manitoba:* The Pas, 18 June 1937, ♀. *Ontario:* South March, 5 July 1927, ♂; Ottawa, 11 August 1931, ♀; North Gower, 26 June 1948, ♀. *Quebec:* Ste. Foy, 13 June 1945, 2 ♀. *Canadian Labrador:* Trout River, Moisie Bay, 22 June 1928, ♂, 29 June 1928, ♂. *Newfoundland:* Balena, 1903, ♀; Searston, 13 July 1943, ♂.